Date

Patent No.: 6765693
Inventor(s): Chang
Issued: 7/20/04
For: PHOTO QUALITY COLOR PRINTING BY USING LIGHT BLACK INK.
Attorney Docket No.

Re: Request for Certificate of Correction

Consideration has been given your request for the issuance of a certificate of correction in the above-identified patent under Rule 1.322.

Respecting the alleged error in column 3, line 17 & 27, is printed in accordance with the record. Therefore, no correction(s) is in order here under United States Codes (U.S.C.) 254 and the code of Federal Regulation (C.F.R.) 1.322.

In view of the forgoing, your request in this matter is hereby denied.

Future correspondence concerning this matter should be directed to:

U.S. Patent and Trademark Office
Washington, DC 20231
Attn: Decisions & Certificates of Correction Branch

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CBN/hr

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO : 6,765,693 B1

DATED : Jul. 20, 2004

INVENTOR(S) : Chang

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 3, line 17, insert the following paragraphs --¶ In the above 100% example, black was set to 100% of the lowest value, 10. The value 10 was then subtracted from the remaining colors, in this case C and M. For the 50% example, black was set to 50% of the lowest value, or 5, and 5 was subtracted from the remaining values, including the minimum value Y.¶ This can be expressed as follows, where N is equal to the minimum value of CMY.

$$N = Min(C, M, Y); \qquad K = k\_generate\_table(N);$$
$$C = C\text{-}ctable(K); \qquad M = M\text{-}mtable(K);$$
$$Y = Y\text{-}ytable(K).$$

The term k_generate_table is a table used to adjust the undercolor removal percentage. This avoids decreasing luminance when black ink takes place of CMY inks, and optimizes the reproduction color gamut. The values ctable, mtable, and ytable adjust the amount of color ink to preserve the correct color chromaticity.--.

Column 3, line 27, insert the following paragraphs --¶ As the gray component density increases, black is generated at a very low percentage. At the maximum gray component density, black is generated at 100%. Black generation at 100% was given as an example above.¶ Use of lighter black ink allows a different black generation table to be used. One example of black generation values in accordance with the invention is shown by curve 20 in Figure 2. Once the gray component density reaches a value near the maximum black ink density, the CMY dots are used for higher levels of gray component density as show by curve 22. Once the maximum black ink density is reached in the gray component curve, the black component becomes a constant at whatever value of black ink intensity that particular ink has.¶ For example, if a black ink of 1/3 the intensity of standard black inks is used, the maximum value of black is 33%. For gray component

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densities higher than values around 33%, the black component will be a constant. At some point, the CMY dots will be used to generate black in addition to the light black ink.¶ In the example using 1/3 intensity ink, the curve 22 has two thresholds. The first threshold occurs at the point where the CMY dots begin to be used to generate black tones. In Figure 2, this value is at 25% gray component density. The second threshold is the point at which black becomes a constant. In Figure 2, this value is at 35% gray component density. In between these two points, a smooth curve links them. These values are for this example only. Different intensities of ink will result in different thresholds.¶ A flowchart for a general method of this invention is shown in Figure 3. At step 30, the gray component value or density is determined. This is probably a known value at this point in the printing process, as the processor needs this information prior to rendering the image.--.

F-5 JAN 2005